Algebra II GHP Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 10 Review Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Divide the Polynomials **Using Long Division:**

1)  2) 

Divide the Polynomials **using Synthetic Division:**

3)  4) 

5) True or False. If it is false, please correct.

1. If  is a zero of , then  \_\_\_\_\_\_\_\_\_
2. If  is a factor of , then \_\_\_\_\_\_\_\_\_\_\_
3. If the polynomial  is synthetically divided by  and the remainder is 5, then .\_\_\_\_\_\_\_\_\_\_\_\_\_
4. If  for the polynomial, then is a factor of . \_\_\_\_\_\_\_\_\_

6) Determine if  is a factor of the polynomial  using substitution.

7) Determine if  is a zero of the polynomial  using synthetic division.

8) Find the polynomial, in factored form, with the roots and .

9) 

A) How many roots will the function have? \_\_\_\_\_\_\_\_\_\_\_\_

B) List all the possible rational roots:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C) Perform the synthetic division.

D) Write the polynomial in its factored form with each factor having only integer coefficients. \_f(x)=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E) Then write the roots of the polynomial. \_\_x={\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F) Sketch the graph below

10) Sketch the graph of the polynomial function below: 